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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,775

08/08/2006

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EXAMINER

LI, MEIYA

ART UNIT

PAPER NUMBER

2811

MAIL DATE

DELIVERY MODE

04/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,775	Applicant(s) OKAMOTO ET AL.	
	Examiner MEIYA LI	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 22, 2008 has been entered.

Election/Restrictions

2. Applicant's election without traverse of species II, claims 1, 2, 4-7 and 9-15 in the reply filed on February 4, 2009 is acknowledged.
3. Claims 3 and 8 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 4, 2009.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 2, 4-7 and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The claimed limitation of "said semiconductor layer", as recited in claims 1 and 4, is unclear as to which element is the semiconductor layer.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 4, 6, 7, and 11-15, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al. (2005/0133838).

As for claims 1 and 4, Johnson et al. show in Fig. 1A and related text a field effect transistor 10 comprising:

a III group nitride semiconductor layer structure including hetero junction 22/12 ([0064]-[0070]);

a source electrode 14 and a drain electrode 16 that are so formed on said semiconductor layer structure 8 as to be separated from each other,

a gate electrode 18 formed on said semiconductor layer and between said source electrode and said drain electrode; and

an insulating film 24 formed on said semiconductor layer structure,

wherein said gate electrode has a field plate portion (Bd+e) that projects towards said drain electrode in the form of an eave and that is formed on said insulating film;

wherein a thickness of a portion of said insulating film lying between said field plate portion and said semiconductor layer structure gradually increases from said gate electrode toward said drain electrode, and

wherein said thickness of said portion of said insulating film varies continuously.

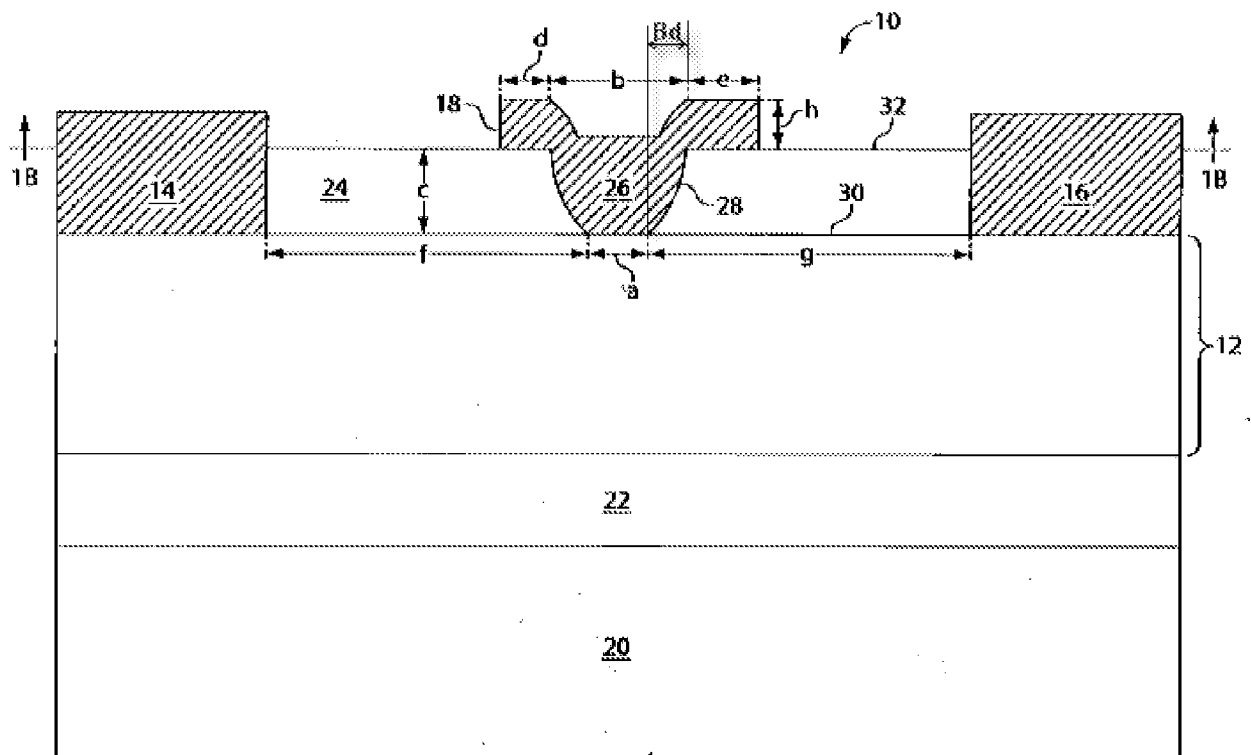


Fig. 1A

As for claim 2, Johnson et al. show said semiconductor layer structure has an AlGaN/GaN hetero structure.

As for claim 6, Johnson et al. show said insulating film is a SiO₂ film or a SiN film ([0035]).

As for claim 7, Johnson et al. show said insulating film is a laminated layer of a SiO₂ film and a SiN film ([0035]).

As for claims 9 and 10, Johnson et al. show the length of said field plate portion does not exceed 70% of an interval between said gate electrode and said drain electrode ([0053], lines 13-15; [0120]).

As for claim 11, Johnson et al. show a thickness of said field plate portion gradually decreases from said gate electrode toward said drain electrode.

As for claims 12-15, Johnson et al. show the length of said field plate portion that extends to said drain electrode is 0.5 μm or more and preferably 0.7 μm or more ([0056] and [0120]).

Claim Rejections - 35 USC § 103

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claim 5, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable Johnson et al. (2005/0133838), as applied to claim 1 above, in view of Martinez et al. (2003/0235974).

Johnson et al. disclosed substantially the entire claimed invention, as applied to claim 1 above, except said insulating film is a SiON film.

Martinez et al. teach the insulating film 38 is a SiON film ([0017], line 1).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to include the SiON insulating layer, as taught by Martinez et al., in Johnson et al.'s device, in order to reduce parasitic capacitances and thus increase the device performance and reduce the power consumption of the device.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 2, 4-7, and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEIYA LI whose telephone number is (571)270-1572. The examiner can normally be reached on Monday-Friday 7:30AM-5:00PM Eastern Standard Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Gurley can be reached on (571) 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. L./
Examiner, Art Unit 2811
4/6/2009
/Ori Nadav/
Primary Examiner, Art Unit 2811